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Vascular Medicine

## DIETARY SODIUM AND ARTERIAL FUNCTION: THE PURSE-HIS STUDY

Poster Contributions

Poster Hall B1

Monday, March 16, 2015, 9:45 a.m.-10:30 a.m.

Session Title: Vascular Function: Emerging Concepts

Abstract Category: 45. Vascular Medicine: Non Coronary Arterial Disease

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**Background:** Dietary sodium is associated with blood pressure (BP), which in turn is associated with arterial stiffness (AS). Animal studies have however suggested that dietary sodium affects arterial structure and function independent of BP. We therefore evaluated if dietary sodium is associated with AS and endothelial function (EF) independent of BP in a large population based study of South Indians (N=8080; mean age 42 years; 58% women).

**Methods:** All participants completed a dietary assessment using 24 hour recall, carotid femoral pulse wave velocity (PWV) and brachial artery flow mediated dilatation (FMD), a measure of EF. Multivariate linear and logistic regression models adjusted for age, gender, mean arterial BP, BMI, physical activity, low density lipoprotein cholesterol, energy intake, socioeconomic status, smoking, stress, and anxiety were used to assess the association between dietary sodium and AS, and EF in 5,748 subjects, after excluded persons with hypertension.

**Results:** Men had higher mean sodium intake than women ( $3522 \pm 2038$  Vs.  $2695 \pm 1554$  mg/day). Dietary sodium was associated with a significant increase in systolic (SBP) and diastolic (DBP) BP ( $p < 0.01$ ). In multivariate models, SBP was independently associated with dietary sodium, both in men ( $\beta = 0.087$ ,  $p < 0.001$ ) and women ( $\beta = 0.049$ ,  $p = 0.03$ ). In the non-HTN population, subjects with the highest quintile of sodium intake showed no significant difference in PWV when compared to the reference group (sodium intake in the lowest quintile) [ $7.47 \pm 1.8$  Vs  $7.6 \pm 1.7$ ,  $p > 0.05$ ] but had a significantly lower FMD (%) ( $4 \pm 0.5$  Vs.  $3.88 \pm 0.6$ ,  $p < 0.01$ ). After multivariate adjustments, the highest quintile of sodium intake was not significantly associated with EF or AS: odds ratio of 1.07 (0.8 - 1.4),  $p > 0.05$  in men; 1.27 (0.99 - 1.6),  $p > 0.05$  in women for endothelial dysfunction (FMD below 25th percentile) and 0.98 (0.73-1.31),  $p > 0.05$  in men; 1.14 (0.87-1.48),  $p > 0.05$  in women for increased arterial stiffness (PWV above 75th percentile).

**Conclusion:** Dietary sodium intake was independently associated with BP, but not with AS and EF. Our study suggests that dietary sodium may not be related to direct vascular effects independent of BP in South Asians.